



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,486	10/07/2004	Masatsugu Nakano	Q83955	1546
23373	7590	06/05/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			SCHINDLER, DAVID M	
			ART UNIT	PAPER NUMBER
			2862	

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/510,486

Applicant(s)

NAKANO ET AL.

Examiner

David Schindler

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 10-12, 16 and 19 is/are rejected.
7) ☒ Claim(s) 13-15, 17 and 18 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 16 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the communication filed 3/16/2006.
2. The Examiner acknowledges the English translation, filed 3/16/2006, of the foreign priority document.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 10, 11, 12, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitazawa (5,757,182).

As to Claims 10 and 19,

Kitazawa discloses a stator provided with a one-phase excitation windings, a rotor having salient poles, wherein the two-phase output windings are wound around a plurality of teeth of the stator ((Figure 5) and (Column 2, Lines 58-67) and (Column 3, Lines 35-44)).

Kitazawa does not explicitly disclose respective numbers of turns of the two-phase output windings are obtained by using m-phase windings, where m is an integer of 3 or more, the m-phase windings being defined in advance to convert the numbers of turns of the m-phase windings into those of two-phase windings.

However, "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The

Art Unit: 2862

patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). (See MPEP 2113).

Therefore, since Kitazawa discloses the structure claimed in claim 10 as disclosed above, the claim is unpatentable over Kitazawa.

With regard to the Kitazawa reference, please note the features of Figure 5 of Kitazawa with respect to Applicant's Figure 73. Also note the last five lines of page 1 of Applicant's specification.

As to Claim 11,

Kitazawa does not explicitly disclose when the numbers of turns of the m-phase windings, where m is an integer of 3 or more, are converted into two-phase windings, the conversion is performed according to the following expression:

$$N_{\alpha i} = k \sum_{n=1}^m N_n \cos\left(\gamma + \frac{2(n-1)}{m} \pi\right)$$

$$N_{\beta i} = k \sum_{n=1}^m N_n \sin\left(\gamma + \frac{2(n-1)}{m} \pi\right)$$

where γ represents an arbitrary constant, k represents an arbitrary constant excluding zero, a subscript i represents a number of a tooth, α and β represent two-phase windings after conversion, and n represents nth phase before conversion, $N_{\alpha i}$ and $N_{\beta i}$ represent the number of turns of the α -phase and β -phase windings in an ith tooth,

Art Unit: 2862

respectively, and N_{ni} represents the number of turns of the n th phrase winding of the i th tooth.

However, "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). (See MPEP 2113).

Therefore, since Kitazawa discloses the structure claimed in claim 10 from which claim 11 depends, as disclosed above, the claim is unpatentable over Kitazawa.

As to Claim 12,

Kitazawa discloses the number of teeth of the stator is $3n$, where n is a natural number (Figure 5).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2862

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitazawa (5,757,182) in view of Li (5,866,964).

As to Claim 16,

Kitazawa discloses the number of teeth of the stator is twelve.

Kitazawa does not disclose a shaft multiple angle is 4 or 8.

Li discloses a shaft multiple angle is 8 (Figure 1).

It would have been obvious to a person of ordinary skill in the art to modify Kitazawa to include a shaft multiple angle is 8 as taught by Li in order to enhance the magnetic detection ability of the system.

Allowable Subject Matter

8. The allowance of claim 11 is withdrawn in favor of the above art rejection.

9. Claims 13, 14, 15, 17, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

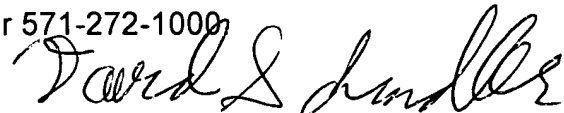
See the previous Office Action with regard to the reasons for allowance of the above claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Schindler whose telephone number is (571) 272-2112. The examiner can normally be reached on M-F (8:00 - 5:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David Schindler
Examiner
Art Unit 2862

DS



EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800